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the
Lineman

RURAL ELECTRIFICATION ADMINISTRATION - U. S. DEPARTMENT OF AGRICULTURE

**IT PAYS TO MAKE SURE BEFORE CLIMBING****Four States Form Group
For Safety And Training**

Four states were represented at a meeting held in Iowa early this year. The purpose of this meeting was to organize an association to further the safety and training activities of these states. The group consists of:

Safety and Job Training

Instructors	State
Thomas Findley	Minnesota
H. C. Potthast	Wisconsin
Earl Ehlers	Wisconsin
D. B. Bidle	Illinois
Chester Strait	Iowa

Council and guidance is obtained from the various State Educators of Trade and Industrial Education.

The second meeting was held April 1 in Dubuque. At this meeting a 20-hour course on transformers was developed. The objective of this course will be to provide:

1. An appreciation of the theory and operation of transformers.
2. An understanding of transformer connections for regular and special jobs.
3. Knowledge required for 'trouble shooting' on transformers.
4. An understanding of proper selection of transformers for the job at hand.
5. Knowledge necessary for transformer repair and maintenance.
6. A basis for proper fuse selection.
7. Knowledge necessary to make load, voltage and ground tests.
8. Knowledge which will result in safety in all types of transformer work.

This group will meet every three months. The exchange of ideas and the development of material for use by their respective states should prove worthwhile.

A section of line had been acquired. The line had been in operation a number of years. Chestnut poles had been used and appeared to be in good shape. A crew of men was removing conductor. A lineman was untying on poles each way from the pole the injured was on. When the conductor was untied, one of the poles broke at the ground line. The line foreman was standing at the base of the pole which broke. He yelled to the man on the pole to unfasten his safety and tried to steady the pole and delay its fall until the belt could be unfastened. The pole came down so suddenly that it struck the foreman who was trying to steady it and tore the upper part of his left ear loose from his head.

The man on the pole suffered a broken pelvis.

Discussion points.**Surface Rot**

Ground line rot may effect the surface of the pole from a few inches above to 12 inches below the ground. Treated poles are more likely to rot on one side only than to decay evenly around the outer surface of the pole. This is due to some portions of the pole absorbing less of the treating solution than other portions of the pole. To check surface rot it may be necessary to dig down 12 inches all around the pole.

Inside Rot

Occasionally a pole rots on the inside at or near the ground line. There may be little or no evidence of this condition on the outer surface of the pole. In some instances the pole is but a hollow shell which will break off when it is climbed.

Termites also attack poles from the inside. There is no outside evidence of their destruction. Termite damage is more common at the top of the pole than at the ground line. However, they do eat away the center of the pole at the ground line now and then. This destruction produces the same condition as internal rot - a hollow shell which will break easily.

(Continued on Page 3)

HANDLING CHAIN SAW

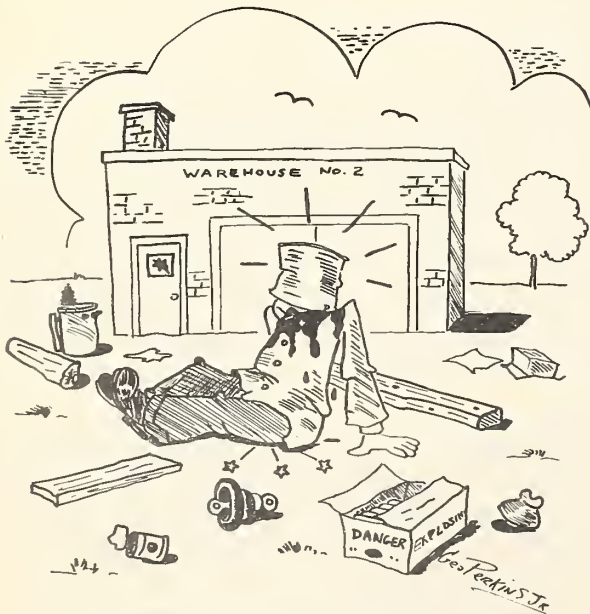
The March issue of 'Rural Electrification', the N.R.E.C.A. magazine, carried the following timely article on the handling of chain saws:

'Many engines operating power chain saws are stopped by grounding the spark plug or wires leading to the engines. The operation usually consists of holding down a small metal strip and, after the engine stops, releasing the strip.

When the saw is being loaded and the circular saw rubs or catches on anything, the motion is transmitted to the engine by means of the belt. Therefore, it could be possible for the engine to start again. The results might be disastrous. The way to avoid any danger of this happening is to disconnect the spark plug wire as the first operation after killing the engine.'

The chain type saw is one of the safest saws to operate. However, few mechanical devices are fool proof and certain precautions must be observed with even the safest of tools.

HARD LUCK HARRY



"MAYBE I BETTER CLEAN UP AROUND HERE!"

Need For Instructional Material

D. B. Bidle, Illinois Safety and Job Training Instructor, addressed the REA Safety Conference on the above subject last fall. Mr. Bidle said in part:

'There is a definite need for instructional material because there is no source from which the lineman can get the information he needs and wants written in such a way that he can read and understand it.

'The electric lineman's job today is such that brains and skill are more essential than brawn as was the case in the past. It calls for highly-trained technician specialized in the operation and maintenance of apparatus and lines.

'We must not only train the new men, but we must retrain the older men and this can best be done with the development and use of instructional material. This material must be written so that men not only can and will read it - they must be able to understand it.

'There are many manuals and handbooks already on the market, but they were written by engineers and are, for the most part, over the head of the average lineman. Very few linemen are college graduates. Many have never attended high school and some didn't get through the grades, through no fault of their own; still, they would like to read and study provided they can understand what they read. The right kind of material will shorten the training period and develop a more efficient, loyal, and safe worker.

'(A) What is job training?

Teaching the workman to manipulate his hands and tools until he has acquired sufficient skill to enable him to do, with or without supervision, any job within the scope of his trade.

'(B) What materials are needed for job training?

The materials used on job, plus diagrams, charts, prints, and procedure manuals, showing the safest known way of doing a job or work. He also needs the right kind of supervision by a trade-competent trainer.

'(C) What is informational training?

Informational training gives the learner the fundamental and technical knowledge of the job, an understanding of why the job is necessary; the characteristics, strength, and nature of the materials used; the principles of operation of equipment and apparatus; how it is made. Job training teaches skill, informational training gives understanding which makes for appreciation of the job and work.

'(D) What materials are needed for informational training? (Continued on Page 3)

Rubber Gloves Are Necessary

A lineman stood on a ladder against a house to tape up the 3-wire service which had just been run. Connection had been made at the pole and the service wires were hot (120-240). The lineman contacted one hot wire with his hand and the other with his arm.

The following comment was taken from E. H. Stovall's monthly safety letter to the Mississippi linemen:

There has never been a bird dog that was as good as his owner thought he was.

There has never been a lineman that could work as close to energized conductors and equipment as he thought he could.

All of you are thinking the man that was burned tapping up a service was careless, (this word is only an excuse in case of an accident) or that he was asleep and that if he had been watching what he was doing he would not have been injured. You think that because you are standing on a dry ladder rubber gloves are not necessary.

Here are a few points for you to consider:

1. The neutral is bare and is in front of you.
2. You are working in a close place.
3. You are standing on a ladder and are out of position if the unexpected should happen.
4. You are in the best position to do as this man did -- get cross-phased.
5. You are in the best position to get in series with a heavy load or short circuit.
6. You are working close to, and with your eyes too close, should an arc set up -- you cannot replace eyes.
7. Some of the ladders that you use are not safe to work on.
8. This is not the first accident of this type.
9. The man on the pole could wait until the service is tapped up at the house.
10. Some of you still pull services from the house instead of on the pole.
11. The service should be dead-ended and made up at the house before you sag and catch it off on the pole.
12. RUBBER GLOVES WOULD HAVE PREVENTED THIS ACCIDENT.

"WALLY" ABEL RESIGNS

W. H. Abel, Nebraska Safety and Job Training Instructor, resigned April 1. 'Wally' did a nice job with the boys in Nebraska. Man-hours worked by system employees increased 171,366 during 1947, Man-hours lost through accident decreased 6,044 hours during this same period. Nebraska can well be proud of this record.

(MAKE SURE - continued)

Test Before You Climb.

It is a good safety practice to test each pole before you climb. Make it a habit. Probing at the ground line, *all of the way around the pole* with a blunt ended bar will give a good indication of how solid the outer surface is. If the bar has a tendency to sink in - remove the dirt all of the way around the pole for a depth of 12 inches and probe this area again with the bar. If there is any question about the condition of the pole, it should be guyed with rope or pike poles before it is climbed.

If the pole is hollow, the blunt bar may pierce the outer surface and expose this condition. The blunt bar striking a hollow pole does not produce a good solid sound.

Note

Sharp pointed bars should not be used to test poles. The sharp point will open up holes which will allow water to enter the pole and may cause the pole to rot at these points.

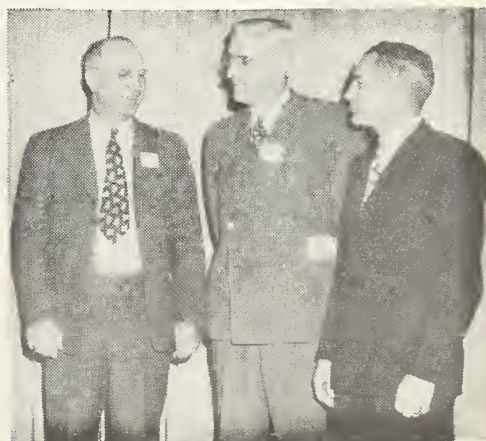
(NEED FOR - continued)

Anything that gives the learner knowledge or at least a chance to get the knowledge of the job, such as manuals, textbooks, job procedure sheets, visual aids, and models.

'(E) To what extent can instructional material be made uniform throughout the nation.

By developing such materials that can be adapted, but not adopted to every specific job.'

Much progress is being made in State programs toward developing the different types of material useful to the lineman.

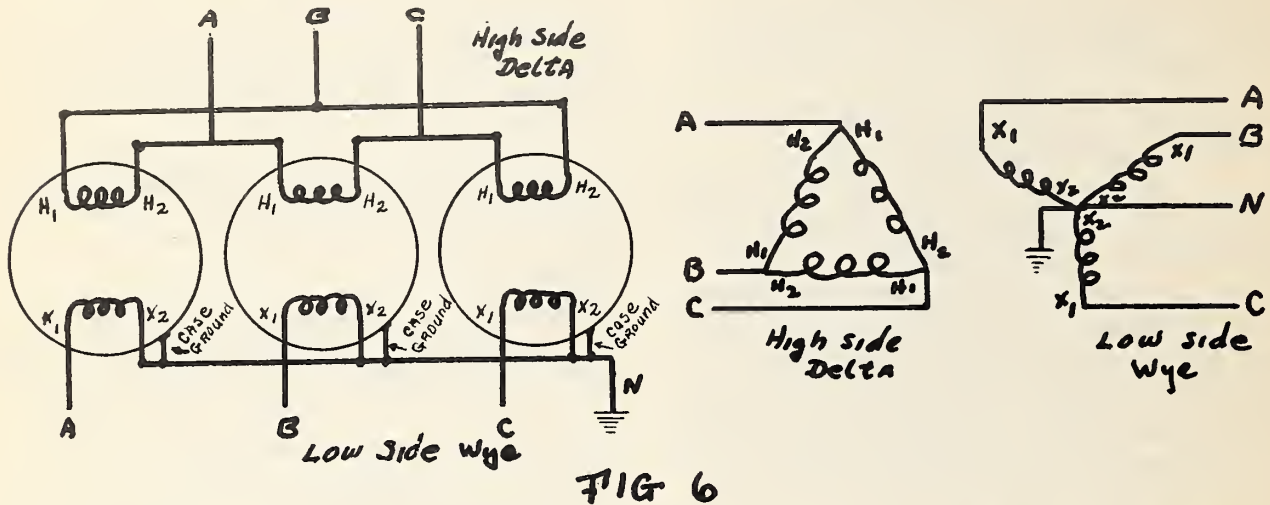


L. to R., D. B. Bidle, Illinois Job Training and Safety Instructor; Ralph A. C. Hill, REA Labor Relations and Safety Specialist; and E. M. Claude, Illinois State Supervisor of Trade and Industrial Education, pictured at Foremen's and Manager's Conference, Springfield, Ill., April 28, 1948.

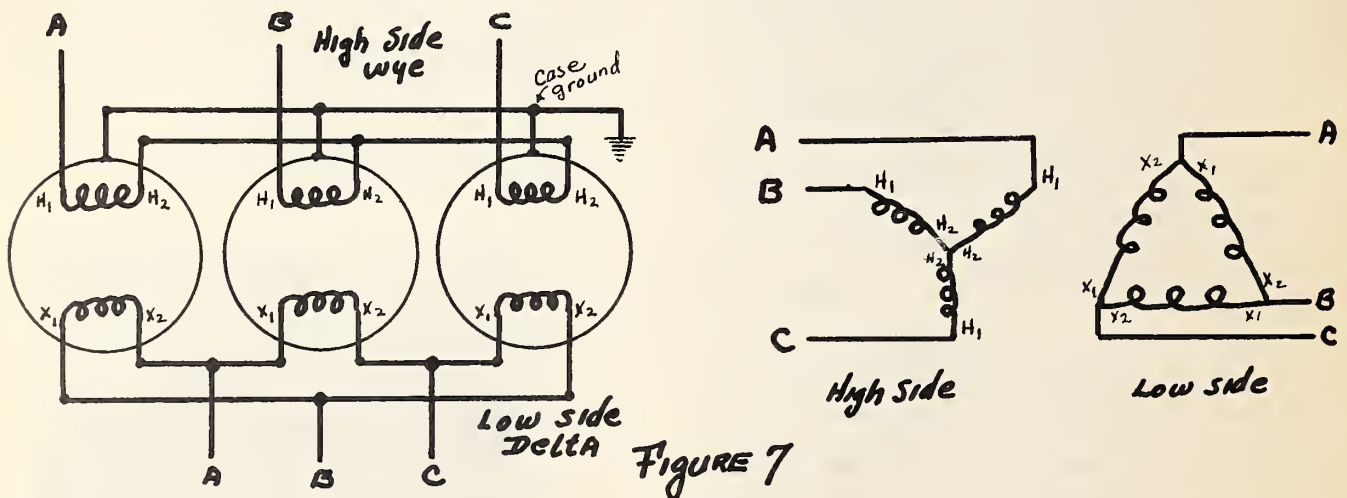
TRANSFORMER CONNECTIONS

Continued From April Issue

These are definite reasons why certain connections or combinations of connections are selected for various types of service. The most common connection on rural power system substations is the Delta-Wye connection, that is Delta on the primary or supply side and Wye on the secondary of the REA system load side. See figure 6.



Three phase substations to serve loads from a rural system are usually connected Wye-Delta with the common point of the primary or high voltage side NOT connected to the neutral of the power system. See figure 7.



NOTE:

The H2 terminals are connected together but are not grounded. They also do not attach to a neutral.

Next month we shall test up the Open-Delta connection which is used to supply 3-phase power from only two single phase transformers. This is necessary when one of the three substation transformers fails.